

What Is Claimed Is:

1. An image forming device comprising:

a paper feed member which applies force in a transport direction to a sheet and a separating member which applies the force in a direction of hindering the transport of the sheet, in which plural multifeed sheets are separated by the paper feed member and the separating member;

a sheet speed detecting part which detects the transport speed V_2 of a sheet on the separating member side;

a multifeed sheet detecting part which detects the transport of plural sheets; and

a control part which determines to be non-multifeed and controls paper feed when the speed V_2 detected by the sheet speed detecting part is $V_2 \leq 0$ and the multifeed sheet detecting part detects the transport of plural sheets.

2. The image forming device according to claim 1, wherein the control part further determines to be multifeed and controls paper feed when the speed V_2 detected by the sheet speed detecting part is $V_2 > 0$ and the multifeed sheet detecting part detects the transport of plural sheets.

3. The image forming device according to claim 1, wherein the image forming device further comprises a nip regulating member which regulates nip pressure which is the pressure contact force of the paper feed part and the separating member or a nip space which is the space between the paper feed part and the separating member, and in the condition of

determining the multifeed, the operation of the nip regulating member is controlled.

4. An image forming device comprising:

a paper feed member which applies force in a transport direction to a sheet and a separating member which applies the force in a direction of hindering the transport of the sheet, in which plural multified sheets are separated by the paper feed member and the separating member;

a paper feed member side sheet speed detecting part which detects the transport speed $V1$ of a sheet on the paper feed member side;

a separating member side sheet speed detecting part which detects the transport speed $V2$ of a sheet on the separating member side;

a multifeed sheet detecting part which detects the transport of plural sheets; and

a control part which determines to be multifeed and controls paper feed when the relationship between the speed $V1$ detected by the paper feed member side sheet speed detecting part and the speed $V2$ detected by the separating member side sheet speed detecting part is $V1 > V2 > 0$ and the multifeed sheet detecting part detects the transport of plural sheets.

5. The image forming device according to claim 4, wherein the image forming device further comprises a nip regulating member which regulates nip pressure which is the pressure contact force of the paper feed part and the separating member or a nip space which is the space between the paper feed

part and the separating member, and in the condition of determining the multifeed, the operation of the nip regulating member is controlled.

6. The image forming device according to claim 4, further comprising:

a nip regulating member which regulates nip pressure which is the pressure contact force of a paper feed roll and the separating member or the nip space which is the space between the paper feed roll and the separating member; and

a nip regulating part which controls the operation of the nip regulating member to release the multifeed in the condition where the multifeed sheet detecting part determines to be multifeed.

7. A sheet transport device comprising:

a paper feed member which applies force in a transport direction to a sheet and a separating member which applies the force in a direction of hindering the transport of the sheet, in which plural multifeed sheets are separated by the paper feed member and the separating member;

a sheet speed detecting part which detects the transport speed V_2 of a sheet on the separating member side;

a multifeed sheet detecting part which detects the transport of plural sheets;

a control part which determines to be non-multifeed and controls paper feed when the speed V_2 detected by the sheet speed detecting part is $V_2 \leq 0$ and the multifeed sheet detecting part detects the transport of plural sheets;

a nip regulating member which regulates nip pressure which is the pressure contact force of a paper feed roll and the separating member or the nip space which is the space between the paper feed roll and the separating member; and

a nip regulating part which controls the operation of the nip regulating member to release the multifeed in the condition where the multifeed sheet detecting part determines to be multifeed.

8. An image forming apparatus using a paper feeding device for feeding a paper, comprising:

a paper feeder for feeding the paper, the paper feeder, contacted on a first side of the paper, applying force in a transport direction to the paper;

a separating feeder, contacted on a second side of the paper, applying the force in a direction of hindering the transport of the paper, wherein plural multifeed papers are separated by the paper feeder and the separating feeder;

a paper speed detector for detecting transport speed V_2 of the paper on a separating feeder side; and

a controller for controlling paper feeding as non-multifeed depending on the result of the paper speed detector.

9. The image forming apparatus as set forth in claim 8, wherein the controller controlling paper feeding as non-multifeed when the speed V_2 detected by the paper speed detector is $V_2 \leq 0$.

10. The image forming apparatus as set forth in claim

8, wherein the controller for controlling paper feeding as multifeed when the speed V_2 detected by the paper speed detector is $V_2 > 0$.

11. The image forming apparatus as set forth in claim 9, further comprising;

a multifeed paper detector for detecting the transport of plural papers, wherein even when the multifeed paper detector detects the transport of plural papers, the controller controlling paper feeding as non-multifeed.

12. The image forming apparatus as set forth in claim 11, wherein the multifeed paper detector is the mechanical detector which directly contacts on the paper for detecting the transport of plural papers.

13. An image forming apparatus using a paper feeding device for feeding a paper, comprising:

a paper feeder for feeding the paper, the paper feeder, contacted on a first side of the paper, applying force in a transport direction to the paper;

a separating feeder, contacted on a second side of the paper, applying the force in a direction of hindering the transport of the paper, wherein plural multifeed papers are separated by the paper feeder and the separating feeder;

a paper feeder side paper speed detector which detects the transport speed V_1 of the paper on the paper feeder side;

a paper speed detector for detecting the transport speed V_2 of the paper on the separating feeder side; and

a controller for controlling paper feeding as

non-multifeed depending on the result of the paper speed detector and a paper feeder side paper speed detector.

14. The image forming apparatus as set forth in claim 13, wherein the controller controlling paper feeding as multifeed when the relationship between the speed $V1$ and $V2$ detected by the paper speed detector and the paper feeder side paper speed detector is $V1 > V2 > 0$.

15. The image forming apparatus as set forth in claim 14, further comprising:

a multifeed paper detector for detecting the transport of plural papers,
wherein when the multifeed paper detector detects the transport of plural papers, the controller controlling paper feeding as multifeed.

16. The image forming apparatus as set forth in claim 14, further comprising:

a multifeed paper detector for detecting the transport of plural papers,
wherein when the multifeed paper detector detects the transport of plural papers and the relationship between the speed $V1$ and $V2$ detected by the paper speed detector and the paper feeder side paper speed detector is $V1 = V2$, the controller controlling paper feeding as multifeed.

17. The image forming apparatus as set forth in claim 14, further comprising:

a multifeed paper detector for detecting the transport of plural papers,

wherein when the multifeed paper detector does not detect the transport of plural papers and the relationship between the speed V1 and V2 detected by the paper speed detector and the paper feederside papers speed detector is $V1=V2$, the controller controlling paper feeding as non-multifeed.